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ANNUAL FOREST INSECT REPORT

YOSEMITE NATIONAL PARK

EMIL ERNST
YOSEMITE NATIONAL PARK
OCTOBER 29, 1936

Mr. Miller

1936 ANNUAL FOREST INSECT REPORT

Summary of Ranger District Data, Recommendations for Control and Costs*

Yosemite ✓ National Park

Ranger District	Name of area[1] in which control is needed	Insect to be controlled	Tree species	Acres of infestation	Estimated No. of infested trees	Estimated cost per tree	Estimated total cost
Headquarters	Yosemite Valley	D.b., D.m.	P.P.	2700	50	CCC	Maintenance
Crane Flat	Crane Flat	D.b, D.m. D.j.	P.P.S.P. J.P.	8500	100	CCC	Maintenance
Mather	None						
Tuol.Mdws.	See supplement	D.m.	Lodgepole		Large number in thousands	No data available for comp.	$6,000 Regular appro.
Chinquapin	Illilouette See supplement	D.j., D.m.	J.P. L.p.	6400	500	CCC	Stub camp, movable
Mariposa Gr.	Marip. Grove	D.m.D.b.D.j.	S.P.P.P. J.P.	15000	250	CCC	Maintenance
Tuol.Mdws.	Forsyth Pass	D.m	Lodgepole	1920	1000	No data avail. for comparison	$3,000

Approved Nov. 2, 1936.
(Date)

John B. Wosky
Acting Superintendent or Custodian)

Submitted by: Emil Ernst
Assistant Forester
(Title)
October 29, 1936
(Date)

* To be filled out by the officer designated by the superintendent to give special attention to insect matters within the park, as stated in the Manual of the Branch of Forestry, 1935.

[1] State in footnote whether maintenance or a new project

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Park Yosemite National Park Ranger district Yosemite Valley Headquarters

Date of Field Survey October, 1936. Time spent on survey Intermittent - 2 days

Method employed (general observations, sample strip, topographic)

General observations and topographic viewing from vantage points surrounding the Valley.

What is the general situation in your district? Very good - Normal or subnormal in the number and volume of losses. Still a few Douglas Fir infested on the inaccessible cliffs surrounding the Valley.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Name of area affected None No. acres None

Timber type YP DF Range in elevation 4000 - 6000

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction

Do the dying trees occur singly or in groups? Singly

Give average number of trees in group

Are the losses increasing, decreasing, or about the same as last year? The losses in this area are much less than last year particularly in the DF type.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)? Barkbeetles and wood borers.

Remarks: Maintenance control has been persistent since April, 1932 and should be continued in this intensively used area.

Approved (date)

Park Supt. (signature)

Submitted October 26, 1936 (date)

By Emil Ernst (name)

Assistant Forester (title)

(NOTE: Please supplement this outline with a) (detailed report of any important infestations)

1936 ANNUAL FOREST INSECT REPORT

Park Yosemite National Park Ranger District #1, Crane Flat

Date of Field Survey October 15-24 Time spent on survey Intermittent 3-man crew one week

Method employed (general observations, sample strip, topographic) General observations supplemented by sample strip 10 chains wide once through a section plus 100% cruise of permanent sample plot at Big Meadows, 160 acres.

What is the general situation in your district? Very good, infestation is normal or below normal although a few very large Sugar Pine have been lost or top killed during the past summer.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Name of area affected None No. acres

Timber type Range in elevation 4500 - 7000

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction
Sugar Pine	20		
Ponderosa Pine	50		
Jeffrey Pine	20		

Do the dying trees occur singly or in groups? Singly - a few small groups

Give average number of trees in group 2-3

Are the losses increasing, decreasing, or about the same as last year? Sample plot less than last year. Rest about the same as last year.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)? Barkbeetles

Remarks: Area is in good shape as result of past control efforts

Approved _____ (date)

Park Supt. _____ (Signature)

Submitted October 26, 1936 (date)

By [illegible] (name)

Assistant Forester (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)

1936 ANNUAL FOREST INSECT REPORT

Park Yosemite National Park Ranger District #2 Mather

Date of Field Survey October, 1936 Time spent on survey 3 days, 4 man crew

Method employed (general observations, sample strip, topographic) General observations, reconnaissance by pack train, sample strip cruises 10 chains wide once through a section, same sections as last year, also 100% cruises of permanent sample plot 160 acres.

What is the general situation in your district? The situation in the Rockefeller Purchase area is very good although a ~~very~~ few large group of Ponderosa Pine were lost during the past summer. No sign of their presence this fall.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Name of area affected None No. acres

Timber type Range in elevation

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction
Ponderosa Pine	100		
Sugar Pine	25		

Do the dying trees occur singly or in groups? Singly - a few large groups

Give average number of trees in group 3 - 10

Are the losses increasing, decreasing, or about the same as last year?

About the same as last year.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)? Barkbeetles

Remarks: This area is in good shape as a result of past control efforts.

Approved _____ (date)

Submitted October 26, 1936 (date)

By Emil Ernst (name)

Park Supt. _____ (Signature)

Assistant Forester (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)

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Park Yosemite National Park Ranger District No. 3 - Tuolumne Meadows

Date of Field Survey Summer - 1936 Time spent on survey 2 weeks reconnaissance and intermittent during summer

Method employed (general observations, sample strip, topographic) General observations on pack trip through high country and also topographic around Tuolumne Meadows.

What is the general situation in your district? In Tuolumne Meadows fair. In Rodgers Canyon, Bear Valley, Benson Lake, Forsyth Pass barkbeetle and needleminer combination very serious and already causing Ghost Forests at the named points.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more are reported:

Name of area affected Benson Lake, Forsyth Pass No. acres 3,250

Timber type LP. Lodgepole Pine Range in elevation 7000 - 9000

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees (In Quantity)	Growth	Reproduction

Do the dying trees occur singly or in groups? Great groups

Give average number of trees in group

Are the losses increasing, decreasing, or about the same as last year? Are increasing in the areas named above.

What insects appear to be responsible for killing trees (barkbeetles the lodgepole pine tussock moth (Hemerocampa vetusta Boisd.) and the needleminer (Evaria milleri Busck)

See attached narrative report for section on this situation.

Remarks:

Approved _____ (date)

Park Supt. _____ (Signature)

Submitted October 26, 1936 (date)

By Emil Ernst (name)

Assistant Forester (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)

1936 ANNUAL FOREST INSECT REPORT

Park Yosemite National Park Ranger District No. 4 Chinquapin

Date of Field Survey Summer-Fall Time spent on survey Intermittent; 3 days

Method employed (general observations, sample strip, topographic) Cruises of permanent sample plots at Black Rascal and Grouse Creek totalling 160 acres. Supplemented by general observations on various field trips.

What is the general situation in your district? Fair. Losses normal or possibly below normal except for minor areas, Illilouette Canyon and Buena Vista trail areas explained in detail in appended narrative report.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Name of area affected Illilouette Canyon 5,000
Buena Vista Trail No. acres 1,600

Timber type Illilouette - Jeffrey Pine
Buena Vista- JP-LP-WP range in elevation 6000 - 8500

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction
Jeffrey Pine	125		
Lodgepole Pine	300		
White Fir	In the hundreds		

Do the dying trees occur singly or in groups? Singly in Jeffrey Pine, in groups in the others.

Give average number of trees in group In JP 3-10, in the WF 3-50

Are the losses increasing, decreasing, or about the same as last year? In the JP the losses are as great as last year. In the LP and WF the losses are as great or greater than last year. The Buena Vista Trail situation was not suspected last year.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)?

Remarks: In the JP, the Jeffrey Pine Beetle (Dendroctonus jeffreyi) In the Lodgepole, the Mtn. Pine Beetle, (D.monticolae) in the Fir (Scolytus sp.) There has been a sustained loss in the WF in the Illilouette Canyon for the last 3 years at least. Approximates 30% kill in these 3 years.

Approved _____ (date)

Submitted October 26, 1936 (date)

By Hail Ernst (name)

Park Supt. _____ (Signature)

Assistant Forester (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)

193[illegible] ANNUAL FOREST INSECT REPORT

Park Yosemite National Park Ranger District No. 5, Mariposa Grove

Date of Field Survey Summer - Fall Time spent on survey Intermittent; 2 days

Method employed (general observations, sample strip, topographic) General observations in the Grove supplemented by 100% cruise of 240 acre permanent sample plot at Wawona.

What is the general situation in your district? Slight increase in infestation due to cessation of maintenance control during the summer months.

If there are any special areas where insect losses are now serious or threaten to become so, answer the following questions, using additional forms if more than one special area is reported:

Name of area affected Mariposa Grove No. acres 1660

Timber type SP-PP-WF Range in elevation 5500 - 6200

Tabulate below your estimate of the number of trees that died from insect attack on this area during the past season:

Tree Species	Mature Trees	Second Growth	Reproduction
Sugar Pine	25		
Ponderosa Pine	20		

Do the dying trees occur singly or in groups? Usually singly

Give average number of trees in group 2 - 3

Are the losses increasing, decreasing, or about the same as last year? Slight increase over last year at this time.

What insects appear to be responsible for the damage (barkbeetles, borers, defoliators, unknown)? Barkbeetles of the genus Dendroctonus.

Remarks: Maintenance control is expected with the Fall rains.

Approved _____ (date)

Submitted October 26, 1936 (date)

By Emil Ernst (name)

Park Supt. _____ (Signature)

Assistant Forester (title)

(NOTE: Please supplement this outline with a detailed report of any important infestations.)

- SUPPLEMENT TO THE ANNUAL FOREST INSECT INFESTATION REPORT -

Elm Leaf Beetle, Galerucella xanthomelaena Schrenk. The spraying operations in the elms against the Elm Leaf Beetle shows more signs of success this year than ever before. The Elms in the Old Village and on the cross-road to the Old Village are taking on a beautiful fall coloring which has not been seen for many years. As a check against the work done this year with the aid of CCC labor can be cited the heavy defoliation of two small elm trees which were not known to exist before in the vicinity of the village chapel. The contrast in appearance is too great to be charged to any other factor than the efficiency of the spraying operations.

Alder Flea Beetle, Haltica bimarginata Say. Very little work of this defoliating insect was observed throughout the year on the formerly very heavily defoliated areas of Alder. A very heavy flight of the adults of this insect was observed in March at several points in the Park but with exception of the start of an aggressive attack at Arch Rock Ranger Station very little defoliation has been observed. This is a complete reversal of the conditions present a year ago throughout all of the alder stands of the Park. A year ago 751 alder were counted on the Merced River banks which were very heavily defoliated. This year there were none to be seen in any state of defoliation.

Red Humped Caterpillar, Schizura Concinna AAS. Infestation has not increased in the least as far as general observations can determine. A few slightly defoliated maples were again observed in the vicinity of Mirror Lake. Not enough to warrant consideration of control measures.

Oyster Shell Scale, Lepidosaphes ulmi Linn. The same condition exists as reported a year ago for this insect.

Hemlock Bark Borer, Melanophila drummondi. A great improvement has occurred from the control work carried out in the Douglas Fir against this bark borer. With the exception of a few inaccessible trees on the upper talus slopes of Yosemite Valley there are very few new infested Douglas Fir to be observed. Every indication points to a complete success of the control operations in the Douglas Fir of the last 3 seasons.

Barkbeetles of the genus Dendroctonus. The Mountain Pine Beetle, D. monticolae has followed very closely the heavy attacks of the Needleminer in Bear Valley, Rodgers Canyon, Kerrick Canyon, Benson Lake, and Forsyth Pass. In each of these areas large losses are being sustained and the numbers of Lodgepole Pine killed in the last by the Mountain Pine Beetle will run into the thousands. The areas named are far from the ordinary routes of travel in the Yosemite and

hence not any too well known. They are also far from the bases of supply necessary to a control campaign. Without the expenditure of fairly large sums of money it is doubted that the situation can be brought under control artificially. Being situated as it is, the Forsyth Pass area may be the only one of these areas having a direct influence upon nearby stands of Lodgepole Pine in the direct path of tourists to the high country of the Park. After or during the destruction of the Forsyth Pass Lodgepole Pine stands it is possible for the barkbeetles to migrate to adjoining stands of Lodgepole Pine in the Tenaya Lake Basin, Echo Creek Basin and Merced Lake, or by steps through the Cathedral Creek drainage to Tuolumne Meadows. Conditions are now favorable in the Forsyth Pass area for the building up of a monster barkbeetle infestation in the Lodgepole Pine.

The barkbeetle situation at Porcupine Flat, Tenaya Lake, and Tuolumne Meadows is nowhere near as serious as enumerated in the previously mentioned areas. The relatively better conditions present in these areas can be attributed partly to the control work in the Lodgepole Pine done a year ago by regularly employed and CCC treating crews. This is particularly true of the Porcupine Flat area where a heavy, infestation of the Needleminer has been building up for several years. Maintenance control of the barkbeetles in these intensively used areas should be done as a matter of anticipation of the building up of local infestations or the spread of the heavy infestations now present in areas such as Forsyth Pass and Rodgers Canyon.

The Mountain Pine Beetle, D. monticolae and the Western Pine Beetle, D. brevicomis, have, with a few exceptions, not been very aggressive in the Sugar and Ponderosa Pine stands of the Park. As a rule losses have been hammered down to the endemic or normal loss to be expected for the areas in question. In fact conditions looked so good early this summer that all maintenance control work in these timber types was suspended until the Fall months. Only a few trees were treated in the intensively used Yosemite Valley.

This Fall there has arisen a need for the maintenance control work in the Mariposa Grove of Big Trees where some 20 or 30 Sugar, Ponderosa and possibly Jeffrey Pine could be treated with advantage to the health of the forest. A few trees have become infested in the Wawona Basin and along the Wawona Road. The heaviest concentration in the Wawona Basin is situated on the slopes of Wawona Dome where large losses have been sustained in the past. These present losses, although noticeable, are nowhere near the amounts lost several years ago.

Strip cruises of the last few days show in the aggregate relatively few losses occurring in the Big Meadows, Crane Flat, and Ackerson Meadows sugar and Ponderosa Pine stands. In the Ackerson

Meadows region several large groups of 5 or more infested trees are present. The tendency towards large groups is always considered a danger signal in insect infestations. These groups are not many, say a total of less than 10.

A strong infestation persists of the Jeffrey Pine Beetle, D. jeffreyi, in the Jeffrey Pine stands of the Illilouette Creek drainage where control work occurred in the summers of 1934 and 1935. Limited transportation prevented the extension of the control work beyond walking from the camp-site on Illilouette Creek. To round control work in this region it will be necessary to make provisions for more than one camp-site if control work is again attempted in this infestation area. It is suggested that an attempt be made to control this infestation next season.

Lodgepole Pine Needleminer, Recurvaria milleri Busck. Increases in intensity and spread of the infestation of the Lodgepole Needleminer are decidedly evident at Forsyth Pass, Rodgers Canyon, Bear Valley, Kerrick Canyon, Merced Lake, and on the two benches on the other side of Benson Lake. The greatest increases have occurred at Forsyth Pass and Bear Valley. Within the two last mentioned areas barkbeetles have increased strongly and have been responsible for a considerable amount of killing. The worst area is the Bear Valley area where the losses from barkbeetles following needleminer will run into the thousands of trees.

At Porcupine Flat there is no evident increase in the intensity or spread of the attack of the Lodgepole Pine Needleminer. There is the possibility that the demonstration control spray operations of a year ago may have been successful beyond anticipation. Scorching of the needles of the trees sprayed was very noticeable early in the season, but a healthy green coloring appears to be coming back to the trees sprayed in the demonstration control. It is yet too early to state that the demonstration control project has been locally successful but it appears that no increase has occured at all in the intensity or spread of the Needleminer in the Porcupine Flat which up to the time of the spraying operations was very noticeably on the increase.

Early examinations of the Lodgepole Pine stands in the Tuolumne Meadows area and in the campgrounds gave indications of a substantial increase in the intensity of the Needleminer infestation. Subsequent observations have not borne out the early indications. For the season as a whole it can be reported that there has been no definite indications of any increase in the Needleminer infestation in the Tuolumne Meadows area.

Extensions of the known areas of the presence of Needleminer infestation in the Lodgepole Pine include light infestations in the

Stubblefield Canyon area, on the Maclure Fork of the Merced, in the Merced Canyon above Merced Lake, on the Isberg trail where it crosses the Lyell Fork of the Merced, the Chilnualna Lakes region, and along the Sunrise Trail south of Cathedral Lake.

Needleminer work in other coniferous trees. The presence of Needleminer work in the Ponderosa Pine was verified early this season along the Wawona Road and at the old Alder Creek Ranger Station. This work is light in intensity with little cause for concern at the present time.

A mixed stand of Mountain White Pine, Whitebark Pine, and Lodgepole Pine along the Isberg Pass trail in the vicinity of the Lyell Fork of the Merced had a peculiar infestation in which Needleminer work was more common in the two white pines than in the Lodgepole Pine.

Needleminer work in the White Fir is very common throughout the Park but its intensity does not seem to have increased at all.

For the other coniferous species from which Needleminer work has been reported there is very little indication of any increase in intensity. There are, however, extensions of the areas in which the work of these unknown needle mining insects have been found.

Prepared by,

Emil Ernst
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